standing on the light outputting surface of the diffusing sheet by virtue of the rougher light outputting surface, a polarized beam splitting sheet which receives the second diffused light from the light outputting surface of the light diffusing sheet, through which one polarized light component of the second diffused light is transmitted, and on which the other polarized light component is reflected, and a light reflecting sheet which is arranged on the back face of the lightconductor and is for reflecting a light into the lightconductor, the light diffusing reflectivity of the light reflecting sheet being 70 or more, and the liquid crystal panel is arranged at the light outputting surface side of the polarized beam splitting sheet of the back light device.

REMARKS

Claims 1-12 are pending. By this Amendment, claims 13 and 14 are canceled without prejudice or disclaimer, and claims 1 and 6 are amended. Reconsideration based on the amendments and remarks is respectfully requested.

The attached Appendix includes marked-up copies of each rewritten claim (37 C.F.R. §1.121(c)(1)(ii)).

Applicant gratefully appreciates the courtesies extended to Applicant's representative by Examiner Chowdhury in the August 13 personal interview. The points discussed are incorporated into the following remarks.

I. The Claims Define Allowable Subject Matter

The Office Action rejects claims 1, 6 and 11-14 under 35 U.S.C. §103 as unpatentable over the admitted prior art in view of U.S. Patent No. 5,870,156 to Heembrock (hereinafter "Heembrock") and further in view of U.S. Patent No. 5,126,882 to Oe et al. (hereinafter "Oe"); claims 2 and 7 under 35 U.S.C. §103 as unpatentable over the admitted prior art in view of Heembrock and Oe and further in view of U.S. Patent No. 5,748,369 to Yokota (hereinafter "Yokota"); claims 3 and 8 under 35 U.S.C. §103 as unpatentable over the admitted prior art in view of Heembrock and Oe and further in view of U.S. Patent

No. 5,793,456 to Broer et al. (hereinafter "Broer"); and claims 1, 4-6 and 9-14 under 35 U.S.C. §103 as unpatentable over Ouderkirk et al. (hereinafter "Ouderkirk") in view of U.S. Patent No. 5,143,433 to Farrell (hereinafter "Farrell") and Heembrock and Oe. The rejections are respectfully traversed.

Claims 1 and 6 are amended to include the features of claims 13 and 14, respectively. Thus, claims 1 and 6 are amended to recite that the light diffusing reflectivity of the light reflecting sheet is 70 or more.

The Office Action admits that none of the applied art discloses this feature. For example, at page 5, paragraph 1, the Office Action asserts that "as to claims 13 and 14, even though Applicant's admitted prior art does not exactly disclose that the light reflectivity of the light reflecting sheet is 70% or more, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ a reflector that has a light reflectivity of 70% or more to optimize device performance." Similarly, the Office Action asserts at page 9, paragraph 3, that "even though Ouderkirk does not explicitly disclose that the light reflectivity of the reflecting sheet is 70% or more, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ a reflector that has a light reflectivity of 70% or more to optimize device performance." These assertions are respectfully traversed.

Specifically, it would not have been obvious to modify the admitted prior art or Ouderkirk, or any of the other applied art, to make up for this deficiency since this claimed feature provides unexpected advantages. For example, as disclosed in the specification at page 16, lines 10-18, and page 20, lines 19-27, if the haze value of the light diffusing sheet and the light diffusing reflectivity of the light reflecting sheet are within the claimed range, then the action to return the light returned to the side of the lightconductor becomes great.

In fact, a Declaration Under 37 C.F.R. §1.132 is attached to this Amendment confirming the unexpected advantages provided by the claimed features discussed above.

Thus, it if had been obvious to modify the applied art to make up for this deficiency, then one of ordinary skill in the art would have done so to achieve these advantages. However, the Examiner has not found a reference that discloses this feature, i.e., a device that includes a light diffusing sheet having a haze value of 30% or more and a light reflecting sheet having a light reflectivity of 70 or more. This modification would therefore not have been obvious.

For at least these reasons, it is respectfully submitted that the claimed invention is distinguishable over the applied art. Withdrawal of the rejections under 35 U.S.C. §103 is respectfully requested.

II. Conclusion

For at least the reasons discussed above, it is respectfully submitted that this application is in condition for allowance.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Eric D. Morehouse
Registration No. 38,565

JAO:EDM/gam

Attachments:
Appendix
Declaration Under 37 C.F.R. §1.132

Date: October 29, 2002

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

APPENDIX

Changes to Claims:

Claims 13 and 14 are canceled.

The following are marked-up versions of the amended claims:

1. (~~Six~~ Seven Times Amended) A back light device comprising:

a light source;

a lightconductor in a substantial plate form comprising a front face, a back face and side end faces,

light radiated from the light source and made incident on the one of the side end faces being output as a first diffused light having a peak oblique to the normal standing on a light outputting surface therefrom which is the front face;

at least one light diffusing sheet for receiving, on its face, the first diffused light output from the light outputting surface of the lightconductor, and outputting a second diffused light having a directivity from a light outputting surface of the diffusing sheet opposite to the face of the diffusing sheet, the light outputting surface of the light diffusing sheet being rougher than the face of the at least one light diffusing sheet, the light diffusing sheet has a haze value of 30% or more and shifts the direction of the maximum intensity of the second diffused light toward the direction of the normal standing on the light outputting surface of the diffusing sheet by virtue of the rougher light outputting surface;

a polarized beam splitting sheet which receives the second diffused light from the light outputting surface of the light diffusing sheet, through which one polarized light component of the second diffused light is transmitted, and on which the other polarized light component is reflected; and

a light reflecting sheet which is arranged on the back face of the lightconductor and is for reflecting a light into the lightconductor, the light diffusing reflectivity of the light reflecting sheet being 70 or more.

6. (~~Six~~ Seven Times Amended) A back light device for a liquid crystal display apparatus comprising the back light device and a liquid crystal panel, wherein the back light device comprising a light source, a lightconductor in a substantial plate form comprising a front face, a back face and side end faces, light radiated from the light source and made incident on the one of the end side faces being output as a first diffused light having a peak oblique to the normal standing on a light outputting surface therefrom which is the front face, at least one light diffusing sheet for receiving, on its face, the first diffused light output from the light outputting surface of the lightconductor, and outputting a second diffused light, having a directivity from a light outputting surface of the at least one light diffusing sheet opposite to the face of the at least one light diffusing sheet, the light outputting surface of the at least one light diffusing sheet being rougher than the face of the at least one light diffusing sheet, the light diffusing sheet has a haze value of 30% or more and shifts the direction of the maximum intensity direction of the second diffused light toward the direction of the normal standing on the light outputting surface of the diffusing sheet by virtue of the rougher light outputting surface, a polarized beam splitting sheet which receives the second diffused light from the light outputting surface of the light diffusing sheet, through which one polarized light component of the second diffused light is transmitted, and on which the other polarized light component is reflected, and a light reflecting sheet which is arranged on the back face of the lightconductor and is for reflecting a light into the lightconductor, the light diffusing reflectivity of the light reflecting sheet being 70 or more, and the liquid crystal panel is arranged at the light outputting surface side of the polarized beam splitting sheet of the back light device.